

WHAT IS CLAIMED IS:

1. A method of using high-density bit-mapped image data to drive a low-density dot-matrix display device, comprising the steps of:

5 allocating each of multiple dot groups oriented in mutual proximity in bit-mapped image data for one display dot on said display device;

applying a predetermined image data selection sequence standard to alternately select one image dot of data from within
10 each said multiple dot groups by means of a repetitive high-speed data selection operation; and

supplying each dot portion of said alternately selected data to said display device as one dot of display drive data.

2. A method of using high-density bit-mapped image
15 data to drive a low-density dot-matrix display device as set forth in claim 1, wherein said image data selection sequence standard alternately selects image data from said multiple dot groups so that each said image data is provided with an equal possibility of being selected in said selection.

20 3. A method of using high-density bit-mapped image data to drive a low-density dot-matrix display device as set forth in claim 1, wherein said image data selection sequence standard alternately selects image data from said multiple dot groups through a process whereby specific display dot data is
25 selected at a higher frequency than other display dot data in said selection.

4. A method of using high-density bit-mapped image data to drive a low-density dot-matrix display device as set forth in claim 1, wherein said image data selection sequence standard includes the steps of:

5 extracting four dot data from said high-density bit-mapped image data to define each said multiple dot group; and
supplying each of the four dot data of the multiple dot group to a particular display dot in said display device in sequence in which each bit of data is extracted alternately in
10 the repetitive high speed data selection operation.

5. A method of using high-density bit-mapped image data to drive a low-density dot-matrix display device, comprising the steps of:

allocating each of multiple dot groups oriented in mutual
15 proximity in bit-mapped image data for one display dot on said display device;

applying a predetermined image data selection sequence and calculation standard to alternately select specific groups of dot data within each said multiple dot groups in a repetitive
20 high speed operation; and

supplying each dot portion of said alternately selected data to said display device as one dot of display drive data.

6. A system for displaying high-density dot-matrix bit-mapped image data on a low-density dot-matrix display,
25 employing the method as set forth in claim 1.

7. A system for displaying high-density dot-matrix bit-mapped image data on a low-density dot-matrix display, employing the method as set forth in claim 5.

8. A dot-matrix display device, comprising:

5 a plurality of cross members intersecting with each other at such intervals as substantially larger than a width of each said cross member;

a plurality of light emitting elements disposed at the intersecting points of said cross members respectively, each
10 said light emitting element being shaped so as not to deteriorate transparency of a structure configured by said intersecting cross members, each said light emitting element being so disposed that an optical axis thereof is oriented substantially perpendicular to a surface of the structure formed by the
15 intersecting cross members; and

means for controlling drive of said light emitting elements respectively, said controlling means being distributed in said cross members.

9. A dot-matrix display device, comprising:

20 a lattice structure having a plurality of vertical and horizontal cross members intersecting with each other at such intervals as substantially larger than a width of each said cross member;

a plurality of light emitting elements disposed at said
25 intersections respectively, each said light emitting element being shaped so as not to deteriorate transparency of said lattice structure, each said light emitting element being so

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disposed that an optical axis thereof is oriented substantially perpendicular to a surface of the lattice structure; and

means for controlling drive of said light emitting elements respectively, said controlling means being arranged
5 in said lattice structure in a manner so that the arranged controlling means does not deteriorate visibility through said lattice structure.

10. A display module for configuring a large-scale dot-matrix display device, comprising:

10 a plurality of cross members intersecting with each other at such intervals as substantially larger than a width of each said cross member, each said cross member including a mating portion at least at one extremity thereof for mating with other display module adjacent thereto;

15 a plurality of light emitting elements disposed at the intersecting points of said cross members respectively, each said light emitting element being shaped so as not to deteriorate transparency of a structure configured by said intersecting cross members, each said light emitting element being so
20 disposed that an optical axis thereof is oriented substantially perpendicular to a surface of the structure formed by the intersecting cross members; and

means for controlling drive of said light emitting elements respectively, said controlling means being
25 distributed in said structure of the intersecting cross members.

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11. A display module as set forth in claim 10, wherein said controlling means comprises:

an input and output connectors for electrically connecting the display module with other display modules adjacent thereto;

an input buffer circuit for receiving an electrical signal applied to said input terminal;

data selection and storage means for depicting data for controlling drive of said light emitting elements responsive to output signals from said input buffer circuit and storing said depicted data temporarily;

a drive circuit for driving said light emitting elements according to the data stored in said data selection and storage means;

an output buffer circuit for transmitting a corresponding signal to output terminals responsive to the signal input from said input buffer circuit; and

a power supply for stabilizing a voltage applied to said input connector and supplying power for driving said respective circuits in the module.

12. A display system for displaying high-density dot-matrix bit-mapped image data on a low-density dot-matrix display device,

said display device comprising:

a lattice structure having a plurality of cross members intersecting with each other at such intervals as substantially larger than a width of each said cross member;

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a plurality of light emitting elements disposed at said intersections respectively, each said light emitting element being shaped so as not to deteriorate transparency of said lattice structure, each said light emitting element being so
5 disposed that an optical axis thereof is oriented substantially perpendicular to a surface of the lattice structure; and

means for controlling drive of said light emitting elements respectively, said controlling means being distributed in said cross members,

10 said display device being driven by display dot data supplied according to the following steps of:

allocating each of multiple dot groups oriented in mutual proximity in said bit-mapped image data for one display dot on said display device;

15 applying a predetermined image data selection sequence standard to alternately select one image dot of data from within each said multiple dot groups by means of a repetitive high-speed data selection operation; and

supplying each dot portion of said alternately selected
20 data to said display device as one dot of display drive data.